

Conference Abstract

Building Capacity for Marine Biodiversity Data Sharing: Reflections from the Marine Biological Data Mobilization Workshops

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Abstract

The Standardizing Marine Biological Data Working Group (SMBD WG) is a global network of biodiversity data managers who meet regularly and collaborate year-round. It was conceptualized at the Integrated Ocean Observing System Code Sprint 2019 ([IOOS Code Sprint](#)) in Ann Arbor, Michigan to build a community of practice for aligning marine biological data to Darwin Core standards (Wieczorek et al. 2012) and sharing with the Ocean Biodiversity Information System ([OBIS](#)). The SMBD WG integrates and adopts practices from the [Earth Science Information Partners - Biological Data Standards Cluster](#), the Biodiversity Information Standards ([TDWG](#)) and the Marine Biodiversity Observation Network Data Management and Cyberinfrastructure Working Group ([MBON - DMAC](#)).

The SMBD WG aims to help data providers and data holders overcome barriers and address data-related questions, empowering our community members with the tools and

knowledge to mobilize marine biological data. To achieve this, the SMBD WG coordinates specialized guidance on data standardization, quality control, and publishing workflows. Since 2022, SMBD WG has organized annual Marine Biological Data Mobilization Workshops (Biddle et al. 2024), bringing together participants from around the world for hands-on training in Findable Accessible Interoperable and Reusable data principles (Wilkinson et al. 2016), [Darwin Core standards](#), taxonomic tools, data cleaning techniques, and publication through OBIS and the Global Biodiversity Information Facility (GBIF). The workshop curriculum follows [The Carpentries](#) evidence-based best-practices of teaching. The materials and [website](#) are openly available under a permissive [GitHub MIT license](#). Key features include hands-on sessions; concurrent instructor-led breakout rooms with specialist volunteers; a fully open and free virtual format using Slack, Zoom, and GitHub; and dual Python/R instruction.

The workshop's implementation is based on community-reported blockers, updates, and data questions shared via the SMBD WG GitHub repository*¹ and [Slack](#), which remain active beyond the workshop to provide ongoing support as participants refine and standardize datasets to final publication. Although long-term impacts are still emerging, the workshops go beyond technical training, building a lasting support network through a data support hub fostering international collaboration and empowering participants to confidently navigate complex data workflows. Some participants have published multiple datasets to OBIS and GBIF, and supported similar efforts in their home institutions.

Participant feedback shows that structured training initiatives strengthen technical capacity and promotes inclusive participation, enabling diverse voices to contribute to the collective effort of mobilizing marine biodiversity data. Curriculum updates are guided by lessons learned and participant feedback, ensuring that it remains relevant, impactful, and responsive to global needs. Since 2022, the number of participants has grown significantly, including the integration of Spanish-language breakout rooms in the 2024, to reduce language barriers and broaden regional engagement.

Keywords

data standards, community of practices, biodiversity data holder, FAIR principles, data support hub

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Conflicts of interest

The authors have declared that no competing interests exist.

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Endnotes

- *1 IOOS BioDataGuide https://github.com/ioos/bio_data_guide/issues